

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A computer-implemented method to permit an application developer to decide the address space model to be supported by an operating system on a computer, the method comprising:

selecting, by an operating system, one of a mostly private address space (MPAS) model and a mostly global address space (MGAS) model, where if the MPAS model is selected, then a process is permitted to map a shared object in a mostly private address space (MPAS) layout so that the process perceives a behavior as if the process is running on a multiple address space operating system, and where if the MGAS model is selected, then the process is permitted to map a shared object in a mostly global address space (MGAS) layout so that the process perceives a behavior as if the process is running on a single address space operating system.

Claim 2 (currently amended): The computer-implemented method of claim 1, wherein the selected MPAS model or MGAS model is indicated in a binary in an application.

Claim 3 (currently amended): The computer-implemented method of claim 2, wherein a kernel of the operating system

reads the binary to determine if support will be provided for the MPAS model or the MGAS model.

Claim 4 (currently amended): The computer-implemented method of claim 1, wherein the MPAS layout comprises one of a 32 bit MPAS layout and a 64 bit MPAS layout.

Claim 5 (currently amended): The computer-implemented method of claim 4, wherein the 32 bit MPAS layout comprises private address spaces.

Claim 6 (currently amended): The computer-implemented method of claim 4, wherein the 64 bit MPAS layout comprises private address spaces and a shared address space.

Claim 7 (currently amended): The computer-implemented method of claim 1, wherein the MGAS layout comprises one of a 32 bit MGAS layout and a 64 bit MGAS layout.

Claim 8 (currently amended): The computer-implemented method of claim 7, wherein the 32 bit MGAS layout comprises shared address spaces and a private address space.

Claim 9 (currently amended): The computer-implemented method of claim 7, wherein the 64 bit MGAS layout comprises shared address spaces and private address spaces.

Claim 10 (currently amended): The computer-implemented method of claim 1, wherein the MPAS layout and the MGAS

layout is partitioned in memory by a kernel of the operating system.

Claim 11 (currently amended): The computer-implemented method of claim 1, further comprising:

managing a hash page table, where a least recently used (LRU) algorithm is used to remove inactive or least recently used translations from the hash page table.

Claim 12 (currently amended): The computer-implemented method of claim 1, further comprising:

allocating a virtual address space for a 32 bit MPAS process by a method comprising:

mapping, by a process, an object to a first virtual address that allows efficient large pages to be stored; and

if the first virtual address is not available, then mapping the object to any virtual address.

Claim 13 (currently amended): The computer-implemented method of claim 1, further comprising:

(a) if a first process has mapped an object in virtual memory, then allocating a same virtual address in an address space of a second process, where the same virtual address is in an address space of the first process;

(b) if step (a) is not possible, then choosing a second virtual address that is aligned with (vaddr) which is the virtual address for the object for the first process;

(c) if step (b) is not possible, then choosing a third virtual address which is aligned with vaddr such that large pages can be chosen;

(d) if step (c) is not possible, then choosing a fourth virtual address which is aligned with vaddr such that efficient aliasing is permitted; and

(e) if step (d) is not possible, then choosing any suitable virtual address.

Claim 14 (currently amended): The computer-implemented method of claim 1, further comprising:

if a plurality of processes have mapped an object in virtual memory, then allocating any suitable existing virtual address to align.

Claim 15 (original): A computer system to permit an application developer to decide the address space model to be supported by an operating system on a computer, the computer comprising: comprising:

a processor; and

an operating system that can be executed by the processor, where the operating system is configured to select one of a mostly private address space (MPAS) model and a mostly global address space (MGAS) model, where if the MPAS model is selected, then a process is permitted to map a shared object in a mostly private address space (MPAS) layout so that the process perceives a behavior as if the process is running on a multiple address space operating system, and where if the MGAS model is selected, then the process is permitted to map a shared object in a

mostly global address space (MGAS) layout so that the process perceives a behavior as if the process is running on a single address space operating system.

Claim 16 (original): The apparatus of claim 15, wherein the selected MPAS model or MGAS model is indicated in a binary in an application.

Claim 17 (original): The apparatus of claim 16, wherein a kernel of the operating system reads the binary to determine if support will be provided for the MPAS model or the MGAS model.

Claim 18 (original): The apparatus of claim 15, wherein the MPAS layout comprises one of a 32 bit MPAS layout and a 64 bit MPAS layout.

Claim 19 (original): The apparatus of claim 18, wherein the 32 bit MPAS layout comprises private address spaces.

Claim 20 (original): The apparatus of claim 18, wherein the 64 bit MPAS layout comprises private address spaces and a shared address space.

Claim 21 (original): The apparatus of claim 15, wherein the MGAS layout comprises one of a 32 bit MGAS layout and a 64 bit MGAS layout.

Claim 22 (original): The apparatus of claim 21, wherein the 32 bit MGAS layout comprises shared address spaces and a private address space.

Claim 23 (original): The apparatus of claim 21, wherein the 64 bit MGAS layout comprises shared address spaces and private address spaces.

Claim 24 (original): The apparatus of claim 15, wherein the MPAS layout and the MGAS layout is partitioned in memory by a kernel of the operating system.

Claim 25 (original): An apparatus to permit an application developer to decide the address space model to be supported by an operating system on a computer, the apparatus comprising:

means for permitting a process to map a shared object in a mostly private address space (MPAS) layout so that the process perceives a behavior as if the process is running on a multiple address space operating system if a MPAS model, and for permitting the process to map a shared object in a mostly global address space (MGAS) layout so that the process perceives a behavior as if the process is running on a single address space operating system if a MGAS model is selected.

Claim 26 (original): An article of manufacture, comprising:
a machine-readable medium having stored thereon instructions to:

permit a process to map a shared object in a mostly private address space (MPAS) layout so that the process perceives a behavior as if the process is running on a multiple address space operating system if a MPAS model, and to permit the process to map a shared object in a mostly global address space (MGAS) layout so that the process perceives a behavior as if the process is running on a single address space operating system if a MGAS model is selected.